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10/723,791	11/26/2003	Rakesh Mohan Lal	132355GS/YOD GEMS:0205	9095
7590 Patrick S. Yoder FLETCHER YODER P.O. Box 692289 Houston, TX 77269-2289			EXAMINER ABDI, AMARA	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/723,791	Applicant(s) LAL ET AL.	
	Examiner Amara Abdi	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 3,5-7,9,10,15,17,18,21,26 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,8,11-14,16,19,20,22 and 27-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/26/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's response to the last office action, filed June 04, 2008 has been entered and made of record.
2. In view of the Applicant amendments, the objection to claim 18 is expressly withdrawn.

Remarks

3. Applicant's arguments with respect to claim 1, 2, 4, 8, 11-14, 16, 19, 20, and 22-34 have been considered but are moot in view of the new ground(s) of rejection: Margulis et al. (US 6,340,994), and Platt et al. (US 6,973,210).

(a) Applicant asserts that the independent claim 1, as amended, recites a method comprising: "determining a desired sampling rate ...based at least partially on a point-spread function of the imaging system or the frequency content of the image data".

However, in response to Applicant's arguments, the Examiner has introduced a new reference (US 6,340,994) to Margulis et al., where determining the desired sampling rate (Nyquist rate) (column 7, line 27-30), based on a point-spread function of the imaging system (column 16-line39-41).

(b) Applicant has amended claim 1, with the limitation: "...if the pixel sampling rate is greater than the desired sampling rate".

However, in response to Applicant's amendment, the Examiner has introduced a new reference (US 6,973,210) to Platt et al., where the pixel sampling rate is greater than the pixel Nyquist rate (desired sampling rate) (column 17, line 18-20).

Therefore, claims 1, 23, and 25 are still not in good condition for allowance.

(c) Applicant asserts that the Krantz reference teaches away from Avinash, ...and even if the Krantz reference was hypothetically modified to further include the shrinking operations disclosed in the Avinash reference, Applicants submit that the resulting shrunken images of Krantz would be under-sampled and would not be suitable or satisfactory for use in the imaging acquisition system disclosed by Krantz reference. Furthermore, the Applicants refers to the cited paragraph of Krantz, col. 3, line 20-26, to assert that the Krantz reference, at best, discloses an image having an actual sampling rate that is less than a desired sampling rate. Furthermore, the Applicants submits that, it would not be obvious to one skilled in the art to combine the teaching of the Krantz reference with image shrinking techniques disclosed by the Avinash reference.

However, in response to Applicants arguments, the Examiner disagrees, because Krantz states the following:

"Tiziani et al., in J. Mod. Opt. 43, 155 (1996) disclose a chromatic confocal microscope using a microlens array objective producing multiple confocal imaging spots on a CCD detector and is intended for topometry. However, for imaging purposes this approach is limited by the optical performance of the microlens array, in particular the numerical aperture (NA)--aberration tradeoff preventing small spot sizes for high resolution, the limited working distance at large NA, and insufficient sample compared to Nyquist's theorem" (col. 3, line17-26).

As stated above, Krantz clearly refers to Tiziani et al. reference, where the Tiziani's et al. approach has insufficient sample compared to Nyquist's theorem". And there is nowhere in Krantz invention where stating that the actual sampling rate that is less than a desired sampling rate. Furthermore, Krantz clearly states in the object of his invention the providing of high resolution, high efficiency, high speed confocal and

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conventional microscope imaging system suitable for defect inspection and review, particularly one whose architecture is scalable to smaller pixel size, and greater field size and data rates".

In response to the Applicants assertions that it's not obvious to combine Krantz and Avinash references, the Examiner would like to point out the following precision:

Krantz discloses a method (column 10, line 6), system (column 1, line 5-6) and computer readable medium storing computer program (column 6, line 65) for producing an image from image data (column 9, line 1) comprising the accessing of the stored image data from a memory (column 6, line 63-65), (the image database is read as memory), the image data defining an input image acquired using an imaging system (column 15, line 15-16), (the imaging system is read as a scanner); determining a pixel-sampling rate for the image data (column 8, line 3-12); and comparing the pixel sampling rate to a desired sampling rate (column 3, line 25-26), (the desired sampling rate is read as Nyquist theorem), and Margulis et al., teaches the determining of the desired sampling rate (Nyquist sampling rate) (column 7, line 27-30), based on a point-spread function of the imaging system (column 16-line39-41); also Platt et al., teaches the fact that the pixel sampling rate is greater than the desired sampling rate (Nyquist sampling rate) (column 17, line 18-20). To link the Krantz, Margulis et al. and Platt et al. references for an undesirable rational, the Examiner has introduced the prior art reference of Avinash (US 5,943,433). Avinash teaches the determining of shrink parameter (column 6, line 21-24), and processing the image data, where shrinking an input image based upon the shrink parameter (column 5, line 14-18).

In addition the KSR, states: " All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yield predictable results to one of ordinary skill in the art at the time of the invention" (*Adapted from Anderson's Black Rock Inc. v. Pavement Salvage Co.*)

All the claim elements are known in references of Krantz et al. and Avinash. The only difference is the combination of the processing of the image data by shrinking the input image, with the method of producing an image from image data.

Thus, it would have been obvious to one having ordinary skill in the art to use the processing of the image by shrinking the input image data as thought by Avinash, with the method of producing an image from image data as shown by Krantz et al., since the processing of the image by shrinking the input image data could be used in combination with the method of producing an image from image data to achieve the predictable results of having the speed of computation substantially improved by using reduced data sets, without compromising the accuracy of the final result (column 4, line 5-8).

Therefore, the combination of Krantz et al. and Avinash references is proper.

Specification

4. The specification is objected to because it does not contain the following limitations, which are added in claims 8, 29, and 30:

"...Wherein processing the image data does not comprise shrinking the input image if the pixel sampling rate is less than the desired sampling rate";

"...wherein processing the image data does not comprise shrinking the input image defined by the image data if the shrink parameter is less than one"; and
"using a first pixel sampling rate...and determining a second pixel sampling rate".

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 8, 29, and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

(a) The new added claim 29, recites the limitation of: "...Wherein processing the image data does not comprise shrinking the input image if the pixel sampling rate is less than the desired sampling rate". There is no support for this limitation in the specification, therefore, it is considered as new matter.

(b) The new added claim 30, recites the limitation of: "...wherein processing the image data does not comprise shrinking the input image defined by the image data if the shrink parameter is less than one". There is no support for this limitation in the specification, therefore, it is considered as new matter.

(c) The new added limitations in claim 8: “using a first pixel sampling rate...and determining a second pixel sampling rate” have no support in the specification. In more specific, the first and the second pixel have no support from the specification, therefore, they are considered as a new matter.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-2, 23, 25, 27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz (US 6,248,988) in view of Margulis et al. (US 6,340,994), Platt et al. (US 6,973,210), and Avinash (US 5,943,433).

(1) Regarding claims 1, 23, and 25:

Krantz discloses a method (column 10, line 6), system (column 1, line 5-6) and computer readable medium storing computer program (column 6, line 65) for producing an image from image data (column 9, line 1) comprising the accessing of the stored image data from a memory (column 6, line 63-65), (the image database is read as memory), the image data defining an input image acquired using an imaging system (column 15, line 15-16), (the imaging system is read as a scanner); determining a pixel-sampling rate for the image data (column 8, line 3-12); and comparing the pixel

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sampling rate to a desired sampling rate (column 3, line 25-26), (the desired sampling rate is read as Nyquist theorem).

Krantz does not explicitly mention the determining of desired sampling rate, wherein the desired sampling rate is determined based at least partially on a point-spread function of the imaging system or the frequency content of the image data; and based upon the comparison, shrinking the input image if the pixel sampling rate is greater than the desired sampling rate.

(a) Obviousness in view of Margulis et al.

Margulis et al., in analogous environment, teaches a system and method for using temporal gamma and reverse super-resolution to process images for use in digital display systems, where determining the desired sampling rate (Nyquist sampling rate) (column 7, line 27-30), based on a point-spread function of the imaging system (column 16, line 39-41).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Margulis et al., where determining the desired sampling rate based on a point-spread function of the imaging system, in the system of Krantz, in order to have an image processing system to enhance display quality and provide the best possible visual images (column 4, line 62-63).

(b) Obviousness in view of Platt et al.

Platt et al., in analogous environment, teaches a filtering image data to obtain samples mapped to pixel sub-components of a display device, where the pixel sampling

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rate is greater than the desired sampling rate (Nyquist sampling rate) (column 17, line 18-20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Platt et al., where the pixel sampling rate is greater than the desired sampling rate, in the system of Krantz, in order to accurately render the color of the images to a desired degree so as to generate displayed images that closely reproduce the image encoded in the image data (column 2, line 29-34).

(c) Obviousness in view of Avinash

Avinash, in analogous environment, teaches a method for correcting inhomogeneity of spatial intensity in an acquired MR image, where determining a shrink parameter (column 6, line 21-24), and processing the image data, where shrinking an input image based upon the shrink parameter (column 5, line 14-18).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Avinash, where determining the shrinking parameter, in the system of Krantz, in order to have the speed of computation substantially improved by using reduced data sets, without compromising the accuracy of the final result (column 4, line 5-8).

(2) Regarding claim 2:

Krantz further discloses the method, where the desired sampling rate is a Nyquist rate sampling for the image (column 8, line 29-30), (the use of Nyquist rate is read as the desired sampling rate).

(3) Regarding claim 27:

Krantz disclose all the subject matter as described in claim 1 above.

Krantz does not explicitly mention the method, wherein shrinking the input image is at least partially based upon a shrink parameter.

Avinash, in analogous environment, teaches a method for correcting inhomogenety of spatial intensity in an acquired MR image, where shrinking an input image based upon the shrink parameter (column 5, line 14-18).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Avinash, where determining the shrinking parameter, in the system of Krantz, in order to have the speed of computation substantially improved by using reduced data sets, without compromising the accuracy of the final result (column 4, line 5-8).

(4) Regarding claim 29:

Krantz discloses all the subject matter as described in claim 1 above.

Krantz does not explicitly mention that processing does not comprises shrinking the input image if the pixel sampling rate is less than the desired sampling rate.

Platt et al., in analogous environment, teaches a filtering image data to obtain samples mapped to pixel sub-components of a display device, where the pixel sampling rate is greater than the desired sampling rate (Nyquist sampling rate) (column 17, line 18-20), (the examiner interpreted that if the pixel sampling rate is less than the desired sampling rate, than there will be no shrinking of the image).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Platt et al., where the pixel sampling rate is greater than the desired sampling rate, in the system of Krantz, in order to accurately render the color of the images to a desired degree so as to generate displayed images that closely reproduce the image encoded in the image data (column 2, line 29-34).

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz, Margulis et al., Platt et al., and Avinash, as applied to claim 1 above, and further in view of Finger et al. (US 6,015,385).

Krantz, Margulis et al., Platt et al., and Avinash disclose all the subject matter as described in claim 1 above.

Krantz, Margulis et al., Platt et al., and Avinash do not explicitly mention the method, where the pixels sampling rate is determined based upon a display filed of view and a size of pixels in the filed of view.

Finger et al., in analogous environment, teaches an ultrasonic diagnostic imaging system with programmable acoustic signal processor, where the pixels sampling rate is determined based upon a display filed of view (column 8, line 17-20) and a size of pixels in the filed of view (column 8, line 8-12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Finger et al., where the pixels sampling rate is determined based upon a display filed of view, in the system of Krantz in order to

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reduce image artifacts and maximize the amount of information in a displayed image, for both full size and enlarged images (column 1, line 19-21).

10. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz, Margulis et al., Platt et al., and Avinash, as applied to claim 27 above, and further in view of Lohmeyer et al. (US 6,061,477).

Lohmeyer et al., in analogous environment, teaches a quality image wrapper, where upsampling the input image signal to at least two times the Nyquist rate to provide an increased sampling rate (Fig. 4, column 4, line 63-67), (N=2 is read as a threshold “at least two times”, and the Nyquist rate is read as ratio).

It would have been obvious to one having ordinary skill in art at the time the invention was made to use the system of Lohmeyer et al., where using a ratio of the pixel sampling rate to the desired sampling rate, in the system of Krantz, in order to increase the sampling rate of a sampled image above the Nyquist rate or samples an analog image at a higher rate than the Nyquist rate (column 2, line 22-24).

11. Claims 8, 13, 16, 24, 26, 30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz (US 6,248,988) in view of Avinash (US 5,943,433), Desloge (US 7,254,199), and Lohmeyer et al. (US 6,061,477).

(1) Regarding claims 8, 16, 24, and 26:

Krantz discloses a method (column 10, line 6), system (column 1, line 5-6) and computer readable medium storing computer program (column 6, line 65) for producing

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an image from image data (column 9, line 1) comprising the accessing of the stored image data from a memory (column 6, line 63-65), (the image database is read as memory), the stored image data defining an input image previously acquired by an imaging system (column 15, line 15-16), (the imaging system is read as a scanner) using a first pixel sampling rate (column 8, line 3-12), determining a second pixel sampling rate for the image data, where the second sampling rate is a desired sampling rate (column 8, line 29-30), (the use of Nyquist rate is read as the desired sampling rate).

Krantz does not explicitly mention the calculating of a shrink parameter as a ratio of the first pixel sampling rate to the desired sampling rate; and processing the image data by shrinking the input image defined by the image data based at least partially on the shrink parameter if the shrink parameter is greater than one.

(a) Obviousness in view of Lohmeyer et al.

Lohmeyer et al., in analogous environment, teaches a quality image wrapper, where upsampling the input image signal to at least two times the Nyquist rate to provide an increased sampling rate (Fig. 4, column 4, line 63-67), (N=2 is read as a threshold “at least two times”, and the Nyquist rate is read as ratio).

It would have been obvious to one having ordinary skill in art at the time the invention was made to use the system of Lohmeyer et al., where using a ratio of the pixel sampling rate to the desired sampling rate, in the system of Krantz, in order to increase the sampling rate of a sampled image above the Nyquist rate or samples an analog image at a higher rate than the Nyquist rate (column 2, line 22-24).

(b) Obviousness in view of Avinash

Avinash, in analogous environment, teaches a method for correcting inhomogeneity of spatial intensity in an acquired MR image, where calculating a shrink parameter (column 6, line 21-24), and processing the image data, where shrinking an input image based upon the shrink parameter (column 5, line 14-18).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Avinash, where determining the shrinking parameter, in the system of Krantz, in order to have the speed of computation substantially improved by using reduced data sets, without compromising the accuracy of the final result (column 4, line 5-8).

(c) Obviousness in view of Desloge

Desloge, in analogous environment, teaches a location-estimating, Null steering (lens) algorithm for adaptive array processing, where the shrink parameter is greater than one (column 36, line 5-10), (k is read as the shrink parameter).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Desloge, where the shrink parameter is greater than one, in the system of Krantz, in order to have a robustness control mechanism, which yields a system that has direct and flexible control over the beamforming process (column 10, line 16-18).

(3) Regarding claim 13:

Krantz further disclose the method, where the desired sampling rate is a Nyquist rate of sampling for the image (column 8, line 29-30), (the use of Nyquist rate is read as the desired sampling rate).

(4) Regarding claims 30 and 32

Krantz discloses all the subject matter as described in claims 8 and 16 above.

Krantz does not explicitly mention processing the image data does not comprises shrinking the input image defined by the image data if the shrink parameter is less than one.

Desloge, in analogous environment, teaches a location-estimating, Null steering (lens) algorithm for adaptive array processing, where the shrink parameter is greater than one (column 36, line 5-10), (k is read as the shrink parameter), (the examiner interpreted that if the shrink parameter is less than one, there will be no shrinking of the input image).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Desloge, where the shrink parameter is greater than one, in the system of Krantz, in order to have a robustness control mechanism, which yields a system that has direct and flexible control over the beamforming process (column 10, line 16-18).

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12. Claims 31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz, Avinash, Desloge, and Lohmeyer et al., as applied to claims 8 and 16 above, and further in view of Finger et al. (US 6,015,385).

Krantz, Avinash, Desloge, and Lohmeyer et al. disclose all the subject matter as described in claims 8 and 16 above. Furthermore, Avinash disclose shrinking the input image (column 6, line 21-24) defined by the image data based upon a redundancy metric (column 5, line 14-18), (the redundancy metric is read as the shrink parameter).

Krantz, Avinash, Desloge, and Lohmeyer et al. do not explicitly mention the redundancy metric determined based upon a display field of view and a size of pixels in the field of view.

Finger et al., in analogous environment, teaches an ultrasonic diagnostic imaging system with programmable acoustic signal processor, where the redundancy metric is determined based upon a display field of view (column 8, line 17-20) and a size of pixels in the field of view (column 8, line 8-12), (the Examiner interpreted that since the redundancy metric is the ratio of the pixel sampling rate to the desired sampling rate, and since the sampling rate is based upon a display field of view and a size of pixels in the field of view, means that the redundancy metric determined based upon a display field of view and a size of pixels in the field of view).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Finger et al., where the pixels sampling rate is determined based upon a display field of view, in the system of Krantz in order to

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reduce image artifacts and maximize the amount of information in a displayed image, for both full size and enlarged images (column 1, line 19-21).

13. Claims 11-12 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz, Avinash, Desloge, and Lohmeyer et al., and Finger et al., as applied to claims 31 and 33 above, and further in view of Margulis et al. (US 6,340,994).

(1) Regarding claims 11 and 19:

Krantz, Avinash, Desloge, and Lohmeyer et al., and Finger et al. disclose all the subject matter as described in claims 31 and 33 above.

Krantz, Avinash, Desloge, and Lohmeyer et al., and Finger et al. do not explicitly mention the resampling of the image data.

Margulis et al., in analogous environment, teaches an image processing system where resampling the image data (column 11, line 45-47).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Margulis et al., where resampling the image data, in the system of Krantz, in order to have an image processing system to enhance display quality and provide the best possible visual images (column 4, line 62-63).

(2) Regarding claims 12 and 20:

Krantz disclose the matching the image data to the desired sampling rate (the matching of matching the image data to the desired sampling rate is read as the same concept as the comparing of the image data to the Nyquist theorem).

Krantz does not explicitly mention the resampling of the image data.

Margulis et al., in analogous environment, teaches an image processing system where resampling the image data (column 11, line 45-47).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Margulis et al., where resampling the image data, in the system of Krantz, in order to have an image processing system to enhance display quality and provide the best possible visual images (column 4, line 62-63).

14. Claims 14 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz, Avinash, Desloge, and Lohmeyer et al., as applied to claims 8 and 16 above, and further in view of Margulis et al. (US 6,340,994).

Krantz, Avinash, Desloge, and Lohmeyer et al. disclose all the subject matter as described in claims 8 and 16 above.

Krantz, Avinash, Desloge, and Lohmeyer et al. do not explicitly mention the method, wherein the desired sampling rate based at least partially on a point-spread function of the imaging system or the frequency content of the image data.

Margulis et al., in analogous environment, teaches a system and method for using temporal gamma and reverse super-resolution to process images for use in digital display systems, where the desired sampling rate (Nyquist sampling rate) (column 7, line 27-30), based on a point-spread function of the imaging system (column 16, line 39-41).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Margulis et al., where determining the desired

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sampling rate based on a point-spread function of the imaging system, in the system of Krantz, in order to have an image processing system to enhance display quality and provide the best possible visual images (column 4, line 62-63).

15. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz, Avinash, Desloge, and Lohmeyer et al., as applied to claim 16 above, and further in view of Delestienne et al. (US 6,377,162).

Krantz, Avinash, Desloge, and Lohmeyer et al. disclose all the subject matter as described in claim 21 above.

Krantz, Avinash, Desloge, and Lohmeyer et al. do not explicitly mention the system, where the acquisition system is selected from a group consisting of a CT system, an MRI system, an ultrasound system, an X-ray system, a tomosynthesis system, and PET system.

Delestienne et al., in analogous environment, teaches a medical diagnosis field service method and apparatus, where the system controller is linked to a communication module generally similar to communication module of MRI system (column 5, line 56-59), (the data acquisition system is read as the system controller).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Delestienne et al., where the data acquisition system is selected linked to an MRI system, in the system of Krantz in order to permit interactive exchange of information, such as service request and data, between

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diagnostic systems, remote or centralized field services facilities, and field services units (column 3, line 1-3).

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information:

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amara Abdi whose telephone number is (571)270-1670. The examiner can normally be reached on Monday through Friday 8:00 Am to 4:00 PM E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Amara Abdi/
Examiner, Art Unit 2624

/Brian Q Le/
Examiner, Art Unit 2624